

REMARKS

In the Office Action mailed September 16, 2003, the Examiner noted that claims 1-15, 17, 18, 20, 22-29, 31 and 32 were pending, and rejected all claims. Claims 1, 13, 15, 17, 18, 20, 29, 31 and 32 have been amended, new claims 33-35 have been added and, thus, in view of the forgoing claims 1-15, 17, 18, 20, 22-29 and 31-35 remain pending for reconsideration which is requested. No new matter has been added. The Examiner's rejections and objections are traversed below.

Pages 2, 5, 7, 8, 10, 11 and 13 of the Office Action reject all claims under 35 U.S.C. § 103 over various combinations of Page, Mukai, Kobayakawa, Chong, Mighdoll, Brown, Kutoba, Fujii, and Logue with the Page reference being the main reference used in the rejections.

As discussed with the Examiner in the interview of January 21, 2004 the Page reference is directed to a sophisticated way of ranking database links based on the number of links. As stated in Page:

Although the ranking method of the present invention is superficially similar to the well known idea of citation counting, the present method is more subtle and complex than citation counting and gives far superior results. In a simple citation ranking, the rank of a document A which has **n backlink pages** is simply

$$r(A)=n.$$

According to one embodiment of the present method of ranking, the backlinks from different pages are weighted differently and the number of links on each page is normalized. More precisely, the rank of a page A is defined according to the present invention as

##EQU1##

where B_1, \dots, B_n are the backlink pages of A, $r(B_1), \dots, r(B_n)$ are their ranks, $|B_1|, \dots, |B_n|$ are their **numbers of forward links**, and α is a constant in the interval $[0, 1]$, and N is the total number of pages in the web. This definition is clearly more complicated and subtle than the simple citation rank. Like the citation rank, this definition yields a **page rank that increases as the number of backlinks increases**. But the present method considers a citation from a highly ranked backlink as more important than a citation from a lowly ranked backlink (provided both citations come from backlink documents that have an equal number of forward links). In the present invention, it is possible, therefore, for a document with only one backlink (from a very highly ranked page) to have a higher rank than another document with many backlinks (from very low ranked pages). This is not the case with simple citation ranking.

(Page col. 4, lines 5-37, with EQU1 found in original and **bold** used for emphasis)

As can be seen from the above, the rank of a page in the Page reference is based on the number of links, both the number of back links, n , and the number of forward links $|B|$ as recognized by the Examiner on the Interview Summary Continuation Sheet.

As also discussed with the Examiner, the present invention determines web link importance based on "URL similarity" or Uniform Resource Locator similarity for the documents and more particularly the "inverse URL similarity" such that the "text" of the URLs for the documents is compared. This text comparison for inverse similarity provides a link weight that "increases as URL similarity decreases". These features are emphasized in independent claims 1, 13, 15, 17, 18, 20, 29, 31 and 32.

As discussed with the Examiner in the interview, the remaining references do not address the features of the invention discussed above.

Mukai analyses documents based on link information in the documents and does not discuss ranking documents based link information to and from a document and particularly not based on character similarity between URLs to and from a document as in the present invention.

Kobayakawa translates web pages and the URL of the page is used to determine the translation environment. No discussion of link similarity is provided in Kobayakawa.

Fujii determines a similarity between a document and the ancestor document of the document. That is, Fujii compares the "contents" of the documents. Fujii does not teach or discuss ranking documents based link information to and from a document and much less using character similarity between URLs to and from a document as in the present invention.

Chong performs keyfact extraction and calculates keyfact frequencies for a document. A keyfact is different from a key word as particularly noted by Chong. Chong does not mention ranking documents based link information to and from a document and particularly not based on character similarity between URLs to and from a document as in the present invention.

Mighdoll includes a server that has a log-in service that accesses a database for access privileges for a user which privileged are transmitted to a client. Mighdoll does not teach or suggest that documents be ranked based on link information to and from a document and particularly not using character similarity between URLs to and from a document as in the present invention.

Brown uses specialized search terms to search a database. Brown does not discuss ranking documents based on link information to and from a document and particularly not using character similarity between URLs to and from a document as in the present invention.

Kutoba is directed to a system that searches data for a specified character string. Kutoba does not discuss ranking documents based on link information to and from a document and particularity not using character similarity between URLs to and from a document as in the present invention.

Logue is directed to a proxy caching system that stores URLs of cached pages to allow the caching server to determine if a requested page is cached. Logue does not discuss ranking documents based on link information to and from a document and particularity not using character similarity between URLs to and from a document as in the present invention.

It is submitted that the invention of independent claims distinguishes over the prior art and withdrawal of the rejection is requested.

The dependent claims depend from the above-discussed independent claims and are patentable over the prior art for the reasons discussed above. The dependent claims also recite additional features not taught or suggested by the prior art. For example, claim 6 emphasizes using document type where a document is selected based on document type. The prior art does not teach or suggest this. It is submitted that the dependent claims are independently patentable over the prior art.

New claims 33-35 emphasize that URL similarity is used to determine link importance. As discussed above and with the Examiner in the interview, the prior art of Page uses link count (forward and backward) not URL similarity. Nothing in the prior art teaches or suggests such. It is submitted that these new claims, which are different and not narrower than prior filed claims distinguish over the prior art.

It is submitted that the claims are not taught, disclosed or suggested by the prior art. The claims are therefore in a condition suitable for allowance. An early Notice of Allowance is requested.

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If any further fees, other than and except for the issue fee, are necessary with respect to this paper, the U.S.P.T.O. is requested to obtain the same from deposit account number 19-3935.

Respectfully submitted,

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